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EXAMINER	
HASSAN, SAAD K	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/796,505	AMIN ET AL.	
	Examiner	Art Unit	
	SAAD HASSAN	2419	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *27 May 2009*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-29* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *29* is/are allowed.

6)☒ Claim(s) *1-28* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *27 May 2009* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *5/27/2009*.

4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application

6) ☐ Other: _____.

DETAILED ACTION

Claims 1-29 have been examined and are pending.

Allowable Subject Matter

1. Claim 29 is allowed.

2. The following is a statement of reasons for the indication of allowable subject matter:

The prior art does not explicitly teach a situation where a node is expressly inserted to resolve a connection, and if it fails to do so it does not become part of the resolved topology. Specifically, the limitation of "removing one or more of the inserted nodes from the FIFO queue when a connection between a first intermediate node of the FIFO queue and a first media node of the FIFO queue is unresolved," forces the claim to be interpreted in the manner described above. Applicant is advised to insert this limitation as appropriately adapted into all independent claims in order to expedite allowance.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

3. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

4. Claims 1-5 and 8-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Olds et al. (US Patent Publication No. 2005/0055517 A1), hereinafter referred to as Olds, in view of Ouyang et al. (US Patent Publication No. 2005/0226324 A1), hereinafter referred to as Ouyang.

Regarding claim 1, Olds teaches a method for resolving a partial media topology, comprising:

receiving a partial media topology that includes a plurality of nodes (Storing a plurality of command nodes in memory [0011]. Also see Fig. 4, where A and C queues are FIFO buffers that store sequences of new command codes 404)

Olds does not explicitly teach including at least one media source node and at least one media sink node in the partial media topology, though data flow from a start to an end node was well known in the art at the time of the invention.

For example, Ouyang teaches data flow from input video data 11 to output channel 41 [Fig. 3 and 0053].

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the queues of Olds to have data flow from media source to media sink, as suggested by Ouyang. This modification would benefit the system by ordering data flow through components for logical operations to occur at appropriate steps [Ouyang, 0053].

In view of the above, the combination of Olds and Ouyang teaches:

populating a working FIFO queue (C queue 412 [Fig. 4, Olds]) with source nodes in the partial topology; iteratively, for each node in the working FIFO queue (An iterative process is used to populate the command nodes in the FIFO queues [Olds, 0049]):

negotiating a media type for each output of the node with the downstream node in the partial topology (Olds teaches scheduling queues based on command type.

However, modifying Olds to negotiate media type would have been obvious as well. Note Ouyang, Fig. 3, a Multi-format encoder 360 negotiates an output type MPEG-1, MPEG-2, MPEG-3 or H.263. Also see associated text in [0064]);

instantiating one or more intermediate nodes (intermediate command nodes are identified in addition to pending command nodes [Olds, 0011]) when it is determined that an output of the node is incompatible with an input of the downstream node (Ouyang teaches transcoding transitional data into a stream having a compatible format with that which is desired [0009]);

connecting the one or more intermediate nodes between the media source node and the media sink node (The intermediate command nodes of Olds are scheduled, where appropriate, before other pending command nodes [0011]); and

adding the one or more intermediate nodes to the working FIFO queue (The command nodes of Olds are scheduled based on processing time as performed in the B Queue [See Fig. 4 and 0039] and are then injected into the C queue according to processing time) only if all input connections of the intermediate nodes are resolved, the one or more intermediate nodes being absent from the partial media topology (new command nodes 404 are scheduled and then according to scheduled are placed into the C queue [0041]. The new command nodes are originally absent from the partial topology and are added when scheduled, which examiner is equating with when they are "resolved").

Regarding claim 2, Olds in view of Ouyang teaches the method of claim 1, wherein the partial media topology is received from a remote process as a parameter in an interface call (Olds, Queue A receives new command nodes 404 that have been recently received from the host 200 [Figs. 2 and 4, and associated text in 0034]. New command nodes represent a partial media topology to be enqueued into the full media topology).

Regarding claim 3, Olds in view of Ouyang teaches the method of claim 1, wherein the working FIFO queue comprises each node in the partial topology (See queues A, B, C of Olds [Fig. 4]. These queues comprise each node of partial topologies. Also see [0034], [0038] and [0039]), and wherein an ordering of the nodes in the partial topology is maintained from the partial topology to the working FIFO queue (the C queue stores scheduled command nodes 406, and the A queue stores new command nodes 404 that are sorted in the B Queue according to scheduling needs, and are then appropriately injected into the C queue [Olds, 0041]. Therefore, the ordering of the nodes prior to injection of new nodes into the C queue is maintained (i.e., scheduled nodes may be separated by newly scheduled nodes, but their order relative to one another is maintained).

Regarding claim 4, Olds in view of Ouyang teaches the method of claim 1, wherein negotiating a media type comprises determining the media types of an upstream node and an associated downstream node (Ouyang teaches the transcoder

transcodes transitional data into a video stream having format compatible with one of a multitude of desirable video formats to an end platform [0009 and items 358 and 360 of Fig. 3]. Examiner maintains that to convert to a compatible video type, the destination host's capabilities must be known, as well as the incoming data type. For example, see Fig. 1, where incoming data is decoded at the transcoder and encoded into an appropriate data type. Also see associated text in 0034).

Regarding claim 5, Olds in view of Ouyang teaches the method of claim 1, wherein instantiating one or more intermediate nodes comprises instantiating at least one of an encoder or a decoder (Encoder 360 and decoder 358 are taught by Ouyang in Fig. 3. The decoder/encoder may be considered an intermediate node, as data travels to it from a source and is output from it to a destination).

Regarding claim 8, Olds in view of Ouyang teaches the method of claim 1, wherein connecting the one or more intermediate nodes between the upstream node and the downstream node comprises generating a data path between the output of a upstream node an input of an intermediate node (Olds teaches placing intermediate nodes between pending nodes [0011]. Ouyang teaches intermediate nodes between the output and input of other nodes [See Fig. 3, data travels through intermediate nodes front end, back end and host device and are then output to further devices]. As combined, it would have thereby been obvious to connect the intermediate nodes to

generate a data path).

Regarding claim 9, Olds in view of Ouyang teaches the method of claim 1, wherein one or more of the intermediate nodes is an option node (Host device 350 includes a decoder and an encoder. The encoder gives several options as to how to encode data, such as MPEG-1, MPEG-2, etc. Examiner understands this to be the equivalent of an "option node" [Ouyang, Fig. 3])).

Regarding claim 10, Olds teaches a system comprising:

one or more tangible computer-readable media (Olds teaches a data storage device that receives commands from an attached host computer, orders and processes the commands [0021]. This must be a computer-readable medium);

Olds does not explicitly teach a media engine embodied on the one or more computer-readable media and configured to communicatively interact with an application to present a media presentation, though doing so was well known in the art at the time of the invention.

For example, Ouyang teaches data flow from input video data 11 to output channel 41, wherein it outputs common media types for output, such as MPEG-1, MPEG-2, MPEG-3 and H.263 data types [Fig. 3 and 0053]. These data types are commonly known to output audio and video files.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the queues of Olds to have a media engine to interact with an application to present a media presentation, as suggested by Ouyang. This modification would benefit the system by ordering data flow through components for logical operations to occur at appropriate steps [Ouyang, 0053].

In view of the above, the combination of Olds and Ouyang teaches the media engine being configured to use:

a media session to generate a partial topology (Olds teaches storing a plurality of command nodes in memory [0011]. Also see Fig. 4, where A and C queues are FIFO buffers that store sequences of new command codes 404), the partial topology including one or more media sources individual ones of which serving as a source of media content, and one or more media sinks configured to sink a media stream (See Ouyang, Fig. 3, where data flows from source channel 11 to sink channel 41), and

a topology loader to resolve the partial topology into a full topology (See Olds, Fig. 4, where B Queue schedules partial topology from A Queue into a full scheduled queue at the B Queue. Also see associated text in 0039. See Olds, Fig. 4, where this data is transferred to the C queue for execution according to schedule time [0046 and 0049]), wherein a count of nodes in the full topology is greater than a count of nodes in the partial topology (C queue consists of scheduled nodes plus newly scheduled nodes transferred from the B queue to the C queue [Olds,0049], and thus the C queue will be

larger as more newly scheduled nodes are injected)

Regarding claim 11, Olds in view of Ouyang teaches the system of claim 10, wherein the media engine exposes one or more application program interfaces that are used by an application to interact directly with the media engine, and indirectly with components used by the media engine (The multi-format encoder directly transmits appropriate media files over interface 41 to a destination host. The encoder indirectly interacts with the data because it is first decoded by decoder 358 [See Fig. 3, 0034, 0051 and 0053].

Regarding claim 12, Olds in view of Ouyang teaches the system of claim 10, wherein the media session invokes the topology loader using an application programming interface (Examiner corresponds the topology loader to be equivalent to the queue structure shown by Olds in Fig. 4. The queues are invoked when new command nodes are received fro host 200 [0034 and Fig. 2]. Examiner equates the host, which is a computer, to an application programming interface [See 0027]).

Regarding claim 13, Olds in view of Ouyang teaches the system of claim 10, wherein the media session passes the partial topology to the topology loader as a parameter in an interface call (Olds, Queue A receives new command nodes 404 that have been recently received from the host 200 [Figs. 2 and 4, and associated text in

0034]. New command nodes represent a partial media topology to be enqueued into the full media topology).

Regarding claim 14,Olds in view of Ouyang teaches the system of claim 10, wherein the topology loader is configured to instantiate one or more intermediate nodes (intermediate command nodes are identified in addition to pending command nodes [Olds, 0011]), and to connect the one or more intermediate nodes in a communication path between a media source and a media sink in a partial topology (The intermediate command nodes of Olds are scheduled, where appropriate, before other pending command nodes [0011]).

Regarding claim 15, Olds in view of Ouyang teaches the system of claim 14, wherein the one or more intermediate nodes comprise a decoder for decoding the output of a source node (Decoder 358 is taught by Ouyang in Fig. 3. This may be considered to be part of an intermediate node, as data travels to it from a source and is output from it to a destination).

Regarding claim 16, Olds in view of Ouyang teaches the system of claim 14, wherein the one or more intermediate nodes comprise an encoder for encoding an input of a source node (Encoder 360 is taught by Ouyang in Fig. 3. The encoder may be considered to be part of an intermediate node, as data travels to it from a source and is

output from it to a destination).

Regarding claim 17, Olds in view of Ouyang teaches the system of claim 14, wherein the one or more intermediate nodes comprise an optional node, and wherein the topology loader implements logic to connect an optional node (The intermediate command nodes of Olds are scheduled, where appropriate, before other pending command nodes [0011]. Examiner understands all intermediate nodes to be optional because they would not be implemented if not instructed to be by the host 200 [0027]. Therefore, on the queue, the optional node is placed where appropriate).

Regarding claim 18, Olds in view of Ouyang teaches the system of claim 10, wherein the topology loader provides at least one interface to provide the application the capability to facilitate resolving the partial topology (See Ouyang, Fig. 4, where B Queue schedules partial topology from A Queue into a full scheduled queue at the B Queue. Also see associated text in 0039).

Regarding claim 19, Olds in view of Ouyang teaches the system of claim 10, wherein the topology loader returns a fully resolved topology (See Ouyang, Fig. 4, where B Queue schedules partial topology from A Queue into a full scheduled queue at the B Queue. Also see associated text in 0039).

Regarding claim 20, Olds teaches a system comprising:

one or more tangible computer-readable media (Olds teaches a data storage device that receives commands from an attached host computer, orders and processes the commands [0021]. This must be a computer-readable medium);

Olds does not explicitly teach a media engine embodied on the one or more computer-readable media and configured to communicatively interact with an application to present a media presentation, though doing so was well known in the art at the time of the invention.

For example, Ouyang teaches data flow from input video data 11 to output channel 41, wherein it outputs common media types for output, such as MPEG-1, MPEG-2, MPEG-3 and H.263 data types [Fig. 3 and 0053]. These data types are commonly known to output audio and video files.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the queues of Olds to have a media engine to interact with an application to present a media presentation, as suggested by Ouyang. This modification would benefit the system by ordering data flow through components for logical operations to occur at appropriate steps [Ouyang, 0053].

In view of the above, the combination of Olds and Ouyang teaches the media engine being configured to use:

a media session to generate one or more media sources individual ones of which serving as a source of media content, and one or more media sinks configured to sink a media stream (See Ouyang, Fig. 3. a media stream 11 serves as a source of media content, and a media stream 41 serves as a sink of media content);

a topology loader to generate one or more transforms communicatively linked with one or more media sources and configured to operate on data received from the one or more media sources (See Ouyang, Fig. 4, where B Queue schedules partial topology from A Queue into a full scheduled queue at the B Queue. Also see associated text in 0039), the topology loader to further receive a partially resolved topology from the media session, and to generate a fully resolved topology (Queue B receives nodes from queue A and sorts them against old nodes [0039]. Examiner understands a fully resolved topology to be the equivalent of a fully sorted queue of all nodes that is injected as scheduled into the C queue [Olds, 0049]) by sequentially negotiating a media type of each source node of the partially resolved topology with an input of a downstream node to determine whether additional intermediate nodes should be added (Ouyang teaches negotiating a media type by using a transcorder to ensure data has a format compatible with a multitude of desirable formats [0009]. Though such functionality does not determine whether additional intermediate nodes should be added, the end product of both the claimed limitation and the teachings of Ouyang would be substantially the same result).

Regarding claim 21, Olds in view of Ouyang teaches the system of claim 20, wherein the media session creates the partial topology, the partial topology to present the presentation (See Fig. 4 of Olds - Queue A is configured to buffer only new command nodes - a partial topology [0038]).

Regarding claim 22, Olds in view of Ouyang teaches the system of claim 21, wherein the media engine creates partial topology by at least determining one or more media sources and one or more media sinks for the presentation (As combined with Ouyang, Olds has a determined media source [Fig. 3, channel 11] and sink [Fig. 3, channel 41]).

Regarding claim 23, Olds in view of Ouyang teaches the system of claim 20, wherein the topology loader analyzes the outputs of a media source and the inputs of a media sink, and negotiates the media type for passing a media stream between the media source and the media sink (Ouyang teaches the transcoder transcodes transitional data into a video stream having format compatible with one of a multitude of desirable video formats to an end platform [0009 and items 358 and 360 of Fig. 3]. Examiner maintains that to convert to a compatible video type, the destination host's capabilities must be known, as well as the incoming data type. For example, see Fig. 1, where incoming data is decoded at the transcoder and encoded into an appropriate data type. Also see associated text in 0034)..

Regarding claim 24, Olds in view of Ouyang teaches the system of claim 20, wherein the topology loader generates a source node list comprising nodes in the partial topology (a list of command node references is used to receive and sort the command nodes [Olds, 0021]).

Regarding claim 25, Olds in view of Ouyang teaches the system of claim 24, wherein the one or more transforms generated by the topology loader are added to the source node list (Queue A is added to Queue B, which is added to the command node reference list [Olds, 0049 and 0050]).

Regarding claim 26, Olds in view of Ouyang teaches the system of claim 25, wherein the topology loader negotiates the media type between the one or more transforms and one or more downstream nodes (Combining the queues of Olds and the encoder/decoder mechanism of Ouyang, the encoder mechanism would encode proper media types for downstream nodes [See flow of Fig. 4, Ouyang]).

Regarding claim 27, Olds in view of Ouyang teaches the system of claim 20, wherein the one or more transforms comprises at least of an encoder or a decoder (Encoder 360 and decoder 358 are taught by Ouyang in Fig. 3. The decoder/encoder may be considered an intermediate node, as data travels to it from a source and is output from it to a destination).

Regarding claim 28, Olds in view of Ouyang teaches the system of claim 20, wherein the topology loader returns the fully resolved topology to the media session (See Ouyang, Fig. 4, where B Queue schedules partial topology from A Queue into a full scheduled queue at the B Queue. Also see associated text in 0039).

5. Claims 6 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Olds in view of Ouyang, as applied to claims 1 and 5, and further in view of Guedalia (US Patent No. 6,536,043 B1).

Regarding claim 6, Olds in view of Ouyang does not teach the method of claim 5, wherein adding the one or more intermediate nodes to the working FIFO queue comprises adding one or more intermediate nodes to convert a compressed output stream of the source node into an uncompressed output, though using a decoder to decompress data was well known in the art at the time of the invention.

For example, Guedalia teaches a decoder for decompressing data [Col 12, lines 56-57].

Therefore, it would have been obvious to one of ordinary skill in the art to modify the decoder of Ouyang as combined with Olds in order to decompress data, as taught by Guedalia. This modification would benefit the system by allowing an encoder to recompress the data into a desirable data format [Ouyang, 0008]. Decompressing the data by adding intermediate nodes is a matter of design choice (i.e., it is functionally

equivalent to other methods of decompression).

Regarding claim 7, Olds in view of Ouyang does not teach the method of claim 5, wherein the encoder converts an uncompressed media stream into a compressed media stream, though using a decoder to decompress data was well known in the art at the time of the invention.

For example, Guedalia teaches an encoder for compressing data [Col 12, lines 1-6].

Therefore, it would have been obvious to one of ordinary skill in the art to modify the encoder of Ouyang as combined with Olds in order to compress data, as taught by Guedalia. This modification would benefit the system by allowing an encoder to recompress the data into a desirable data format [Ouyang, 0008].

Response to Arguments

6. Applicant's arguments with respect to claims 1-28 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

a. US Patent Publication No. 2005/0066082: discusses inserting intermediate nodes in a FIFO queue.

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL.** See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to SAAD HASSAN whose telephone number is (571)270-7158. The examiner can normally be reached on M-F 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jayanti Patel can be reached on (571) 272-2988. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/SAAD HASSAN/
Examiner, Art Unit 2419

/Alpus H. Hsu/
Primary Examiner, Art Unit 2419